SEQUENCE LISTING

<110> Jørgensen, Steen Troels
Rasmussen, Michael Dolberg
Andersen, Jens Tønne
Olsen, Carsten

<120> Multiple insertion of genes

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<223> DNA sequence of the dal-gene encoding D-alanine racemase

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gactccgtcg ctgaataaaa gcttccgctt tcacagcgac tggcccaata acagcagcca    420

ggtatactta ttcgaatcgc tcgtaaagga tgtcaaaaat gatggggaag cttctttttc    480

cgcaaaggat tcaaaataca tttttgaaac gaaaacgaat tatcagcata atcagatgct    540

gccgactcag gaaatcgttt tccataaaaa gaccatggct ccttcatcgg ttaaagtgat    600

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                                               Met Ser Leu Lys
                                               1

cca ttc tat aga aag aca tgg gcc gaa atc gat tta acg gct tta aaa      1362
Pro Phe Tyr Arg Lys Thr Trp Ala Glu Ile Asp Leu Thr Ala Leu Lys
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gaa aac gtc cgc aat atg aag cgg cac atc ggc gag cat gtc cgc ctg      1410
Glu Asn Val Arg Asn Met Lys Arg His Ile Gly Glu His Val Arg Leu
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atg gcc gtc gtt aaa gcg aat gcc tac gga cac ggg gat gca cag gta      1458
Met Ala Val Val Lys Ala Asn Ala Tyr Gly His Gly Asp Ala Gln Val
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gcg aag gcg gct ctt gca gaa ggg gcg tcc att ctt gct gtg gct tta      1506
Ala Lys Ala Ala Leu Ala Glu Gly Ala Ser Ile Leu Ala Val Ala Leu
        55                  60                  65

ttg gat gaa gcg ctt tcg ctg agg gcg cag ggg att gaa gaa ccg att      1554
Leu Asp Glu Ala Leu Ser Leu Arg Ala Gln Gly Ile Glu Glu Pro Ile
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aag cgc att atc gtg act ggc tac tcc gtc ggc tgg ctg aaa gac gtg     1650
Lys Arg Ile Ile Val Thr Gly Tyr Ser Val Gly Trp Leu Lys Asp Val
                105                 110                 115

ctc ggt ttt ctg aat gag gcc gaa gct cct ctt gaa tat cat ttg aag     1698
Leu Gly Phe Leu Asn Glu Ala Glu Ala Pro Leu Glu Tyr His Leu Lys
            120                 125                 130

atc gac acg ggc atg ggc cgc ctt ggc tgc aaa acg gaa gaa gag atc     1746
Ile Asp Thr Gly Met Gly Arg Leu Gly Cys Lys Thr Glu Glu Glu Ile
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aaa gaa atg atg gag atg acc gaa tcg aac gat aag ctc aat tgt acg     1794
Lys Glu Met Met Glu Met Thr Glu Ser Asn Asp Lys Leu Asn Cys Thr
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ggc gtg ttc act cat ttc gcc acg gcg gac gaa aag gac acc gat tat     1842
Gly Val Phe Thr His Phe Ala Thr Ala Asp Glu Lys Asp Thr Asp Tyr
165                 170                 175                 180

ttc aac atg cat ctt gac cgc ttt aaa gag ctg atc agc ccc ttc ccg     1890
Phe Asn Met His Leu Asp Arg Phe Lys Glu Leu Ile Ser Pro Phe Pro
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ctt gac cgt ttg atg gtg cat tcg tca aac agc gcc gcg ggt ctg cgc     1938
Leu Asp Arg Leu Met Val His Ser Ser Asn Ser Ala Ala Gly Leu Arg
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ttc agg gaa cag cta ttt aat gcc gtc cgc ttc ggc atc ggc atg tac     1986
Phe Arg Glu Gln Leu Phe Asn Ala Val Arg Phe Gly Ile Gly Met Tyr
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ggt ttg gcg ccg tca acc gaa ata aaa gac gag ctg ccg ttt cgt ctg     2034
Gly Leu Ala Pro Ser Thr Glu Ile Lys Asp Glu Leu Pro Phe Arg Leu
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cgg gaa gtg ttt tcg ctt cat acc gaa ctc acc cat gtg aaa aaa att     2082
Arg Glu Val Phe Ser Leu His Thr Glu Leu Thr His Val Lys Lys Ile
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aaa aaa ggc gag agc gtc agc tac ggg gcg aca tat aca gct cag cgc     2130
Lys Lys Gly Glu Ser Val Ser Tyr Gly Ala Thr Tyr Thr Ala Gln Arg
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gac gaa tgg atc ggg aca gtc ccc gtc ggg tat gcc gac gga tgg ctg     2178
Asp Glu Trp Ile Gly Thr Val Pro Val Gly Tyr Ala Asp Gly Trp Leu
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agg cgc ctg gcc gga acg gaa gtg ctg atc gac gga aaa cgc caa aaa     2226
Arg Arg Leu Ala Gly Thr Glu Val Leu Ile Asp Gly Lys Arg Gln Lys
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EP 2 345 730 A1

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Glu Tyr Pro Val Gly Thr Lys Val Thr Leu Ile Gly Lys Gln Lys Asp
325                 330                 335                 340

gaa tgg atc tca gtc gac gaa atc gcc caa aat ttg cag acg atc aat     2370
Glu Trp Ile Ser Val Asp Glu Ile Ala Gln Asn Leu Gln Thr Ile Asn
                345                 350                 355

tat gaa att acc tgt atg ata agt tca agg gtg ccc cgt atg ttt ttg     2418
Tyr Glu Ile Thr Cys Met Ile Ser Ser Arg Val Pro Arg Met Phe Leu
            360                 365                 370

gaa aat ggg agt ata atg gaa ata agg aat ccg atc ttg cct gat caa     2466
Glu Asn Gly Ser Ile Met Glu Ile Arg Asn Pro Ile Leu Pro Asp Gln
        375                 380                 385

tcc tgaaaattga tgaattagcg gaaaaacaac tttgcttgcg aaaagaataa          2519
Ser

tgatatgatt atgaatggaa tggatagagt gttgtatccg taagtttggt ggaggtgtat   2579

gtttttgtct gaatccagcg caacaactga aatattgatt cgcttgccag aagctttagt   2639

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tgctcgaggc gaaagagcaa ctttttttgt gttcaaaaat aacaatacga tataatggta   3299

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35 40 45

Asp Ala Gln Val Ala Lys Ala Ala Leu Ala Glu Gly Ala Ser Ile Leu
50 55 60

Ala Val Ala Leu Leu Asp Glu Ala Leu Ser Leu Arg Ala Gln Gly Ile
65 70 75 80

Glu Glu Pro Ile Leu Val Leu Gly Ala Val Pro Thr Glu Tyr Ala Ser
85 90 95

Ile Ala Ala Glu Lys Arg Ile Ile Val Thr Gly Tyr Ser Val Gly Trp
100 105 110

Leu Lys Asp Val Leu Gly Phe Leu Asn Glu Ala Glu Ala Pro Leu Glu
115 120 125

Tyr His Leu Lys Ile Asp Thr Gly Met Gly Arg Leu Gly Cys Lys Thr
130 135 140

Glu Glu Glu Ile Lys Glu Met Met Glu Met Thr Glu Ser Asn Asp Lys
145 150 155 160

Leu Asn Cys Thr Gly Val Phe Thr His Phe Ala Thr Ala Asp Glu Lys
165 170 175

Asp Thr Asp Tyr Phe Asn Met His Leu Asp Arg Phe Lys Glu Leu Ile
180 185 190

Ser Pro Phe Pro Leu Asp Arg Leu Met Val His Ser Ser Asn Ser Ala
195 200 205

Ala Gly Leu Arg Phe Arg Glu Gln Leu Phe Asn Ala Val Arg Phe Gly
210 215 220

Ile Gly Met Tyr Gly Leu Ala Pro Ser Thr Glu Ile Lys Asp Glu Leu
225 230 235 240

Pro Phe Arg Leu Arg Glu Val Phe Ser Leu His Thr Glu Leu Thr His
245 250 255

Val Lys Lys Ile Lys Lys Gly Glu Ser Val Ser Tyr Gly Ala Thr Tyr
260 265 270

Thr Ala Gln Arg Asp Glu Trp Ile Gly Thr Val Pro Val Gly Tyr Ala
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Asp Gly Trp Leu Arg Arg Leu Ala Gly Thr Glu Val Leu Ile Asp Gly
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Lys Arg Gln Lys Ile Ala Gly Arg Ile Cys Met Asp Gln Phe Met Ile
305 310 315 320

Ser Leu Ala Glu Glu Tyr Pro Val Gly Thr Lys Val Thr Leu Ile Gly
325 330 335

Lys Gln Lys Asp Glu Trp Ile Ser Val Asp Glu Ile Ala Gln Asn Leu
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Gln Thr Ile Asn Tyr Glu Ile Thr Cys Met Ile Ser Ser Arg Val Pro
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